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EXAMINER

POON, KING Y

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 07/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/521,663	Applicant(s) TAYLOR ET AL.	
	Examiner Karl R. Reitz	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Two response amendments have been made of record. Claims 1, 3, 5, 8, 9, 14, 15, 18-20, 22, 23, 25, 27, 28, 33, 36 and 37 have been amended, claims 38-55 have been added and claims 1-55 are now pending. All objections to the specification and drawings along with the 35 USC § 112 rejections have been withdrawn.

Response to Arguments

2. Applicant's arguments filed on 8 June 2004 have been fully considered but they are not persuasive.

3. Applicant argues (for claims 1-4, 6, 7, 9, 17-19, 21-24, 26, 28 and 35) that Gerlach "gives a false impression of its relevance" because the terms "resource" and "schedule" are "used in entirely different ways in the Gerlach reference." Applicant further states that Gerlach uses "scheduling" only to ensure that the resource is present when it is required by the printer, not for "scheduling printer processor resources for the different stages of printing a document in accordance with resource information".

4. It is agreed that Gerlach does not disclose a change in the operation tasks performed by the printer. However, as noted before and as admitted by applicant, Gerlach does change the order in which resources are downloaded and stalls the operations effectively if downloading is not performed in time (amendment page 16 last sentence). Clearly, altering the timing and order of resource downloading is scheduling, because, if it were a normal printer system instead of Gerlach's, resources would be downloaded in a different (less efficient) order and time. The invention as claimed by the applicant says only "scheduling printer processor resources for the different stages

of printing". Which is exactly what Gerlach does, as described above. It may be true that Applicant's invention "changes the operation of tasks relating to printing a page" (page 16 last sentence), however Applicant claims only scheduling resources, which is exactly what Gerlach does.

5. Applicant's analogous argument for claims 36 and 37 (page 17 2nd paragraph) is also unpersuasive for the same reasons.

6. New claims 38-55 are rejected under new grounds as described below.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-4, 6, 7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Gerlach (5,469,532).

9. In accordance with claim 1, Gerlach discloses the practice of the printing of a job from a computer with a printer, which has a processor (col. 5 lines 3-8). Gerlach further discloses the computer generates instruction data to enable the printer to print the job (col. 8 lines 27-45 and col. 9 lines 8-13). Gerlach further discloses the computer generates information regarding the printer's required resources for printing the job (col. 8 lines 27-45). Gerlach further discloses that instruction data and resource information are sent from computer to printer (col. 8 lines 27-45 and col. 9 lines 8-13). Gerlach further discloses that the use of the printer processor's resources is scheduled for

different stages of printing of the job, in accordance with the resource information (col. 8 lines 50-57 and col. 11 lines 24-25). Gerlach further discloses that the job is printed with resources used as scheduled (col. 9 lines 12-13).

10. In accordance with claim 2, Gerlach discloses that instruction data is provided in page description language (PDL) and/or job control language (JCL) (col. 9 line 67).

11. In accordance with claim 3, Gerlach discloses that resource information can be provided as an annotation to the PDL and/or JCL, in Gerlach's device resources required for printing are gathered and placed into a resource store together with the RPL data (render primitives list), which are formed from PDL data (col. 10 lines 29-33). Further, after resource information is generated, the resource information is annotated to the instruction data (col. 10 lines 29-33).

12. In accordance with claim 4, Gerlach discloses that a common information processing structure carry out the steps of generating instruction data and resource information and then annotating the instruction data with the resource information (col. 10 lines 28-33). In Gerlach's system the device is called a resource assembler, it converts PDL data to RPL data and adds resources for transmission to printer (col. 10 lines 28-33).

13. In accordance with claim 6, Gerlach discloses that a first information processing structure carry out the step of generating the instruction data. In Gerlach's system, the application program performs this task by generating PDL data (col. 9 lines 66-67). Gerlach further discloses that a second information processing structure carry out the step of generating the resource information and annotating the instruction data with the

resource information. In Gerlach's system, the resource assembly performs this task by gathering required resources and generating RPL data from PDL data and sending RPL data along with resources to the printer (col. 10 lines 28-33).

14. In accordance with claim 7, Gerlach discloses that the second information structure (the resource assembler; col. 10 lines 28-33) be located in an information path for instruction data from the first information processing (the application program; col. 9 line 67) structure to the printer (figure 2; where resource assembler 208 is between application program 204 and printer 226). Further, since the second information processing structure takes the output of the first information processing structure as input, and the printer engine takes as input the output of the second information processing structure, it would be obvious to a person of ordinary skill in the art that the second information processing structure must lie in between the first information processing structure and the printer engine (A outputs to B, which outputs to C, therefore B must be in between A and C).

15. In accordance with claim 9, Gerlach discloses that a discrete structure, receives instruction data as input, in Gerlach's system the resource assembler receives instruction data in the form of PDL data from the application program, and outputs instruction data with resource information (col. 10 lines 28-33). In Gerlach's system instruction data in the form of RPL data is output from the resource assembler along with resources required for printing (col. 10 lines 28-33).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerlach in view of Snipp (5,699,495).

18. Gerlach discloses all the limitations of claim 4, from which claim 5 depends. Gerlach further discloses that the structure that performs the operations of the common information processing structure must lie in between the application program, which originally generates PDL data and the printer, to which instruction data and resource information will ultimately be sent (col. 9 line 66 – col. 10 line 33). Gerlach does not disclose expressly that the common information processing structure be the printer driver.

19. Snipp discloses that the printer driver lies between the application program and the print device (figure 2; where application program 26 connects to print device 14 through print driver 38B) to provide device driver instructions for the printer.

20. Gerlach and Snipp are combinable because they are from the same field of endeavor. At the time of invention it would have been obvious to a person of ordinary skill in the art to use the print driver of Snipp to perform the functions of the resource assembler taught by Gerlach (col. 10 lines 28-33), because it would provide a single focal point for instructions for document printing.

21. Gerlach discloses all the limitations of claim 7, from which claim 8 depends.

Gerlach further discloses that the structure that performs the operations of the second information processing structure must lie in between the application program, which originally generates PDL data and the printer, to which instruction data and resource information will ultimately be sent (col. 9 line 66 – col. 10 line 33). Gerlach does not disclose expressly that the second information processing structure be the printer spooler.

22. Snipp discloses that the printer spooler lies between the application program and the print device (figure 2; where application program 26 connects to print device 14 through print spooler 35).

23. Gerlach and Snipp are combinable because they are from the same field of endeavor. At the time of invention it would have been obvious to a person of ordinary skill in the art to use a print spooler taught by Snipp for the resource assembler taught by Gerlach (col. 10 lines 28-33), because it would provide for more flexible and complex print scheduling.

24. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gerlach in view of Motoyama (5,319,748).

25. Gerlach discloses all the limitations found in claim 3 from which claim 10 depends. Gerlach does not disclose expressly that the instruction data and resource information be specified in the form of comments, and that prior to sending data to the printer, the comments are filtered to extract resource information.

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26. Motoyama discloses using comments to distinguish "various resources" (col. 2 line 39).

27. Gerlach and Motoyama are combinable because they are from the same field of endeavor. At the time of invention it would have been obvious to a person of ordinary skill in the art that the resource information could be placed in comments with the instruction data. The motivation of Gerlach's system is to get the resource information to the printer prior to printing, so the allocation of resources can be planned and printing is not slowed (col. 11 lines 12-15 and col. 16 lines 25-27). Since Gerlach's system is communicating resource information, and it is known from Motoyama (col. 2 line 39) that resource information is provided in comments, it would be obvious to use the comments as a means of sending resource information to the printer because it would greatly simplify resource information communication.

28. Although Gerlach does not disclose filtering comments for resource information, he does disclose filtering the PDL data to determine what resources are required (col. 10 lines 29-31). Since Motoyama discloses that PDL data may contain resource information in comments it would be obvious that the combination of Gerlach's system with Motoyama's would provide filtering of comments.

29. Claims 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerlach in view of Motoyama in further view of Siegel (5,678,133) and Motoyama (EP 0 538 059).

30. With respect to claims 11-13, Gerlach and Motoyama, do not disclose expressly where the comments are located in the PDL or JCL when they are sent to the printer.

31. Siegel discloses that "page properties" are embedded in the PDL header, which is sent to the printer (col. 6 lines 55-57). Motoyama (EP) discloses that resource information can be posted at "the beginning of each distinct document segment" (abstract lines 6-8).

32. Gerlach and Motoyama and Siegel and Motoyama (EP) are combinable because they are from the same field of endeavor. At the time of invention, it would have been obvious to a person of ordinary skill in the art to send resource information from the computer to the printer in the form of comments in the PDL, as Motoyama describes, and to have the information located in a header of the PDL, as described by Siegel. The motivation for doing so would have been to get resource information to the printer prior to transmitting data to be printed as the header gets to the printer first.

33. All the resource information can be sent in one header at the beginning of the PDL as described by Siegel (col. 6 lines 55-57) or resource information could be sent at the "beginning of each distinct document segment" as described in Motoyama (EP) (abstract lines 6-8).

34. Therefore, it would have been obvious to combine Siegel with Gerlach and Motoyama and Motoyama (EP) to obtain the invention as specified in claims 11-13.

35. Claims 14-15 are rejected as obvious for analogous reasons. Claim 14 further specifies the page headers contain resource information only for the page to which they relate or to pages later in the job if their information has not already been provided. It would be obvious to a person of ordinary skill in the art that page headers not contain information regarding pages that have already printed or that are not to be printed as

this extraneous data would simply slow down the process without adding anything of value.

36. Claim 15 further specifies a method where no resource information is provided as a comment to the page header of the first page. In other words the first page is printed in the conventional manner and the remaining job is printed in the manner described above and rejected as obvious. At the time of invention, it would have been obvious to a person of ordinary skill in the art, to send data relating to the first page of the job to the printer as soon as it is ready and then continue generating resource information for the remainder of the job, because doing so allows the printer to begin printing immediately instead of waiting for resource information to be generated.

37. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gerlach in view of Motoyama in further view of Siegel and Motoyama (EP).

38. Gerlach, Motoyama, Siegel and Motoyama (EP) combine to disclose all the limitations of claim 15, from which claim 16 depends.

39. Gerlach further discloses that computer data can be translated into a bit-map data file (col. 1 lines 16-17). The data file is sent to the printer and into the print engine, which controls the printing process by handling the use of the printer's resources (col. 1 lines 20-26). Therefore, Gerlach discloses that for printing in this manner, no resource information is generated prior to the data arriving at the printer; instead the print engine handles the use of the resources.

40. Gerlach is combinable with Motoyama, Siegel and Motoyama (EP) for reasons already given above.

Claim Rejections - 35 USC § 102

41. Claims 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Gerlach.

42. In accordance with claim 17, Gerlach discloses a printer adapted to print a job from instruction data and resource information, in Gerlach's system the Resource Executor 224, located in the printer, follows commands from instruction data and uses resources that have previously been scheduled to print a job (col. 9 lines 8-13). A printer processor, is adapted to schedule its resources for the different stages of printing the job from the instruction data in accordance with the resource information; in Gerlach's system, the Resource Loader 214, performs the function of the printer processor, by determining the order in which resources will be used during the stages of printing (col. 8 lines 50-57). The job is then printed with the resources used as scheduled (col. 9 lines 10-13).

43. In accordance with claim 18, Gerlach discloses that instruction data is provided in page description language (PDL) and/or job control language (JCL) (col. 9 line 67).

44. In accordance with claim 19, Gerlach discloses that resource information can be provided as an annotation to the PDL and/or JCL, in Gerlach's device resources required for printing are gathered and placed into a resource store together with the RPL data (render primitives list), which are formed from PDL data (col. 10 lines 29-33). Further, after resource information is generated, the resource information is annotated to the instruction data (col. 10 lines 29-33).

Claim Rejections - 35 USC § 103

45. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gerlach in view of Motoyama.

46. Gerlach discloses all the limitations found in claim 19 from which claim 20 depends. Gerlach does not disclose expressly that the instruction data and resource information be specified in the form of comments, and that the comments are filtered to extract resource information.

47. Motoyama discloses using comments to distinguish "various resources" (col. 2 line 39).

48. Gerlach and Motoyama are combinable because they are from the same field of endeavor. At the time of invention it would have been obvious to a person of ordinary skill in the art that the resource information could be placed in comments with the instruction data. The motivation of Gerlach's system is to get the resource information to the printer prior to printing, so the allocation of resources can be planned and printing is not slowed (col. 11 lines 12-15 and col. 16 lines 25-27). Since Gerlach's system is communicating resource information, and it is known from Motoyama (col. 2 line 39) that resource information is provided in comments, it would be obvious to use the comments as a means of sending resource information to the printer because it would greatly simplify resource information communication.

49. Although Gerlach does not disclose filtering comments for resource information, he does disclose filtering the PDL data to determine what resources are required (col. 10 lines 29-31). Since Motoyama discloses that PDL data may contain resource

information in comments it would be obvious that the combination of Gerlach's system with Motoyama's would provide filtering of comments.

Claim Rejections - 35 USC § 102

50. Claims 21-24, 26 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Gerlach.

51. In accordance with claim 21, Gerlach discloses a computer programmed to provide a job for printing (col. 9 lines 62-66 and 11-13). The computer contains a first information processing structure to generate instruction data to enable a printer to print the job; as described above, in Gerlach's system the application program generates PDL data, which is used in printing a job (col. 9 line 62 – col. 10 line 2). The computer contains a second information processing structure to generate resource information indicative of resources required by the printer at different stages of printing; as described above, in Gerlach's system, the resource assembler generates resource information for the printer (col. 10 lines 28-33). Finally, the computer contains an information path to send instruction data and resource information from the computer to the printer; in Gerlach's system information may be sent from the resource assembler to the printer (figure 2; as shown the resource assembler 208 can send data to the resource scheduler 216, which is part of the printer).

52. In accordance with claim 22 Gerlach further discloses that the first information processing structure generates instruction data as PDL and/or JCL; in Gerlach's system the application program generates PDL data (col. 9 line 67).

53. In accordance with claim 23, Gerlach discloses that the second information processing structure provides resource information as an annotation to the PDL and/or JCL; in Gerlach's device resources required for printing are gathered by the resource assembler and placed into a resource store together with the RPL (render primitives list), which is formed from the PDL data (col. 10 lines 29-33). Further, after resource information is generated, the resource information is annotated to the instruction data and together sent on to the printer (col. 10 lines 29-33).

54. In accordance with claim 24, Gerlach further discloses that the first information processing structure and the second information processing structure be combined in a common information processing structure; in Gerlach's system the resource assembler takes PDL data and converts it to RPL data, which is a generation of instruction data (although instruction data has already been generated once by the application program, the resource assembler converts the PDL to RPL which is further generation of instruction data) and the resource assembler determines resource requirements of the printer, thus the resource assembler performs all the tasks defined by the first and second information processing structures and is therefore a single common information processing structure (col. 10 lines 28-33).

55. In accordance with claim 26, Gerlach discloses that the second information structure (the resource assembler; col. 10 lines 28-33) be located in an information path for instruction data from the first information processing (the application program; col. 9 line 67) structure to the printer (figure 2; where resource assembler 208 is between application program 204 and printer 226). Further, since the second information

processing structure takes the output of the first information processing structure as input, and the printer engine takes as input the output of the second information processing structure, it would be obvious to a person of ordinary skill in the art that the second information processing structure must lie in between the first information processing structure and the printer engine (A outputs to B, which outputs to C, therefore B must be in between A and C). Claim 28 is rejected for the same reasons claim 26 is rejected (see Claim Rejections - 35 USC § 112 section).

Claim Rejections - 35 USC § 103

56. Claims 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerlach in view of Snipp.

57. Gerlach discloses all the limitations of claim 24, from which claim 25 depends. Gerlach further discloses that the structure that performs the operations of the common information processing structure must lie in between the application program, which originally generates PDL data and the printer, to which instruction data and resource information will ultimately be sent (col. 9 line 66 – col. 10 line 33). Gerlach does not disclose expressly that the common information processing structure be the printer driver.

58. Snipp discloses that the printer driver lies between the application program and the print device (figure 2; where application program 26 connects to print device 14 through print driver 38B to provide device driver instructions for the printer).

59. Gerlach and Snipp are combinable because they are from the same field of endeavor. At the time of invention it would have been obvious to a person of ordinary

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skill in the art to use the print driver of Snipp to perform the functions of the resource assembler taught by Gerlach (col. 10 lines 28-33), because it would provide a single focal point for instructions for document printing.

60. Gerlach discloses all the limitations of claim 26, from which claim 27 depends. Gerlach further discloses that the structure that performs the operations of the second information processing structure must lie in between the application program, which originally generates PDL data and the printer, to which instruction data and resource information will ultimately be sent (col. 9 line 66 – col. 10 line 33). Gerlach does not disclose expressly that the second information processing structure be the printer spooler.

61. Snipp discloses that the printer spooler lies between the application program and the print device (figure 2; where application program 26 connects to print device 14 through print spooler 35).

62. Gerlach and Snipp are combinable because they are from the same field of endeavor. At the time of invention it would have been obvious to a person of ordinary skill in the art to use a print spooler taught by Snipp for the resource assembler taught by Gerlach (col. 10 lines 28-33), because it would provide for more flexible and complex print scheduling.

63. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gerlach in view of Motoyama.

64. Gerlach discloses all the limitations found in claim 23 from which claim 29 depends. Gerlach does not disclose expressly that the instruction data and resource information be specified in the form of comments in PDL or JCL.

65. Motoyama discloses using comments to distinguish "various resources" (col. 2 line 39).

66. Gerlach and Motoyama are combinable because they are from the same field of endeavor. At the time of invention it would have been obvious to a person of ordinary skill in the art that the resource information could be placed in comments with the instruction data. The motivation of Gerlach's system is to get the resource information to the printer prior to printing, so the allocation of resources can be planned and printing is not slowed (col. 11 lines 12-15 and col. 16 lines 25-27). Since Gerlach's system is communicating resource information, and it is known from Motoyama (col. 2 line 39) that resource information is provided in comments, it would be obvious to use the comments as a means of sending resource information to the printer because it would greatly simplify resource information communication.

67. Claims 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerlach in view of Motoyama in further view of Siegel and Motoyama (EP).

68. With respect to claims 30-32, Gerlach and Motoyama, do not disclose expressly where the comments are located in the PDL or JCL when they are sent to the printer.

69. Siegel discloses that "page properties" are embedded in the PDL header, which is sent to the printer (col. 6 lines 55-57). Motoyama (EP) discloses that resource

information can be posted at "the beginning of each distinct document segment" (abstract lines 6-8).

70. Gerlach and Motoyama and Siegel and Motoyama (EP) are combinable because they are from the same field of endeavor. At the time of invention, it would have been obvious to a person of ordinary skill in the art to send resource information from the computer to the printer in the form of comments in the PDL, as Motoyama describes, and to have the information located in a header of the PDL, as described by Siegel. The motivation for doing so would have been to get resource information to the printer prior to transmitting data to be printed as the header gets to the printer first.

71. All the resource information can be sent in one header at the beginning of the PDL as described by Siegel (col. 6 lines 55-57) or resource information could be sent at the "beginning of each distinct document segment" as described in Motoyama (EP) (abstract lines 6-8).

72. Therefore, it would have been obvious to combine Siegel with Gerlach and Motoyama and Motoyama (EP) to obtain the invention as specified in claims 30-32.

73. Claim 33 further specifies a method where no resource information is provided as a comment to the page header of the first page. In other words the first page is printed in the conventional manner and the remaining job is printed in the manner described above and rejected as obvious. At the time of invention, it would have been obvious to a person of ordinary skill in the art, to send data relating to the first page of the job to the printer as soon as it is ready and then continue generating resource information for the

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remainder of the job, because doing so allows the printer to begin printing instead of waiting for resource information to be generated.

74. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gerlach in view of Motoyama in further view of Siegel and Motoyama (EP).

75. Gerlach, Motoyama, Siegel and Motoyama (EP) combine to disclose all the limitations of claim 33, from which claim 34 depends.

76. Gerlach further discloses that computer data can be translated into a bit-map data file (col. 1 lines 16-17). The data file is sent to the printer and into the print engine, which controls the printing process by handling the use of the printer's resources (col. 1 lines 20-26). Therefore, Gerlach discloses that for printing in this manner, no resource information is generated prior to the data arriving at the printer; instead the print engine handles the use of the resources.

77. Gerlach is combinable with Motoyama, Siegel and Motoyama (EP) for reasons already given above.

Claim Rejections - 35 USC § 102

78. Claim 35 is rejected under 35 U.S.C. 102(b) as being anticipated by Gerlach.

79. In accordance with claim 35, Gerlach discloses a computer system with a printer adapted to print a document from instruction data and resource information (col. 10 lines 28-33 and col. 9 lines 8-13). The printer has a processor, which is adapted to schedule its resources for the different stages of printing a job from the instruction data and resource information (col. 8 lines 63-67). Then, to print the job from the instruction data with the printer resources as scheduled (col. 9 lines 8-13). A computer is

programmed to provide a job for printing. The computer has a first information processing structure to generate instruction data to enable a printer to print the job, which is the application program in Gerlach's system (col. 9 lines 66-67). It further has a second information processing structure to generate resource information indicative of resource requirements of the printer at different stages of printing the job, which is the resource assembler in Gerlach's system (col. 8 lines 39-45). The computer has an information path to send instruction data and resource information from the computer to the printer (figure 2; data can be sent from resource assembler 208 or resource loader 214 in the computer to the resource scheduler 216 or printer resource store 220 in the printer), and a communication path to carry the information from computer to printer (figure 2; data can be sent from resource assembler 208 or resource loader 214 in the computer to the resource scheduler 216 or printer resource store 220 in the printer).

Claim Rejections - 35 USC § 103

80. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerlach in view of Nagata (5,696,984).

81. Claims 36 and 37 use a program storage medium having computer readable program codes to implement the method (already described above) of claims 1-3.

82. Gerlach discloses the steps of the method of claims 1-3 as described above in the rejections of claims 1-3. Gerlach does not disclose expressly the use of a program to implement the method.

83. Nagata discloses using a program to implement a method (col. 5 lines 65-67).

84. Gerlach and Nagata are combinable because they are from the same field of endeavor. Therefore, it would have been obvious to one of ordinary skill in the art to use a program to implement the method disclosed by Gerlach. The motivation for doing so would have to use the method disclosed by Gerlach to control the computer and printer system.

85. Claims 38-45, 50 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerlach in view of Barry (5,596,416).

86. In accordance with claims 38-45, 50 and 51, Gerlach discloses printing pages (col. 1 line 13).

87. However Gerlach does not disclose altering the order of operation of tasks relating to printing a document segment, or more specifically altering the scheduling to print later pages prior to printing earlier pages.

88. Barry discloses scheduling the printing tasks and allowing later pages to be printed before earlier pages; in Barry's system, multiple print engines are used to print a document, and the order of printing is controlled and executed as shown on the right-hand side of figure 6 (col. 9 lines 57-67). As seen in the figure, later pages are finished prior to earlier pages; for example, page 3 is completed prior to page 2.

89. Gerlach and Barry are combinable because they are from the same field of endeavor, namely altering the order of printing.

90. Therefore, it would have been obvious to one of ordinary skill in the art to allow the scheduling mechanisms of Gerlach to schedule the operation of printing, including altering the order of the pages to be printed.

91. The motivation for doing so would have to print the document as quickly as possible.

92. Claims 46-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerlach in view of Nagata in further view of Barry.

93. In accordance with claims 46-49, Gerlach discloses printing pages (col. 1 line 13).

94. However Gerlach and Nagata do not disclose altering the order of operation of tasks relating to printing a document segment, or more specifically altering the scheduling to print later pages prior to printing earlier pages.

95. Barry discloses scheduling the printing tasks and allowing later pages to be printed before earlier pages; in Barry's system, multiple print engines are used to print a document, and the order of printing is controlled and executed as shown on the right-hand side of figure 6 (col. 9 lines 57-67). As seen in the figure, later pages are finished prior to earlier pages; for example, page 3 is completed prior to page 2.

96. Gerlach, Nagata and Barry are combinable because they are from the same field of endeavor, namely altering the order of printing.

97. Therefore, it would have been obvious to one of ordinary skill in the art to allow the scheduling mechanisms of Gerlach to schedule the operation of printing, including altering the order of the pages to be printed.

98. The motivation for doing so would have to print the document as quickly as possible.

99. Claims 52-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerlach in view of Motoyama.

100. In accordance with claim 52, Gerlach discloses the practice of the printing of a job from a computer with a printer, which has a processor (col. 5 lines 3-8). Gerlach further discloses the computer generates instruction data to enable the printer to print the job (col. 8 lines 27-45 and col. 9 lines 8-13). Gerlach further discloses the computer generates information regarding the printer's required resources for printing the job (col. 8 lines 27-45).

101. Gerlach further discloses that instruction data and resource information are sent from computer to printer (col. 8 lines 27-45 and col. 9 lines 8-13). Gerlach further discloses that the use of the printer processor's resources is scheduled for different stages of printing of the job, in accordance with the resource information (col. 8 lines 50-57 and col. 11 lines 24-25). Gerlach further discloses that the job is printed with resources used as scheduled (col. 9 lines 12-13).

102. As described above for claim 10, Motoyama discloses using comments to distinguish "various resources" (col. 2 line 39).

103. Therefore, as stated for claim 10, at the time of invention it would have been obvious to a person of ordinary skill in the art that the resource information could be placed in comments with the instruction data. The motivation of Gerlach's system is to get the resource information to the printer prior to printing, so the allocation of resources can be planned and printing is not slowed (col. 11 lines 12-15 and col. 16 lines 25-27). Since Gerlach's system is communicating resource information, and it is known from

Motoyama (col. 2 line 39) that resource information is provided in comments, it would be obvious to use the comments as a means of sending resource information to the printer because it would greatly simplify resource information communication.

104. In accordance with claim 53, Gerlach discloses using a PDL (col. 10 lines 29-31).

105. In accordance with claims 54 and 55, the apparatus of claims 52 and 53 performs the method of claims 54 and 55.

Contact Information

106. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl R. Reitz whose telephone number is (703) 305-8696. The examiner can normally be reached on Monday-Friday 8:00-4:30.

107. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on (703) 305-7452. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

108. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9700.



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